Endoscopic ultrasonography-guided transhepatic antegrade self-expandable metal stent placement in a patient with surgically altered anatomy

Fig. 1 Abdominal computed tomography shows dilatation of the intrahepatic biliary tree and stenosis of the hepaticojejunostomy in an 83-year-old man presenting with cholangitis. The patient had a history of distal pancreatectomy with splenectomy and a subsequent Whipple procedure.

Fig. 2 Cholangiography shows dilatation of the intrahepatic and common hepatic ducts and stenosis of the hepaticojejunostomy.

An 83-year-old man who had a history of distal pancreatectomy with splenectomy and a subsequent Whipple procedure (both surgical procedures for metastatic renal cancer) presented to the emergency room with cholangitis (fever and jaundice), leukocytosis (33900/mm³), a total bilirubin level of 4.55 mg/dL (direct 3.7 mg/dL), and elevated alkaline phosphatase (780 U/L). Abdominal computed tomography showed dilatation of the intrahepatic biliary tree and stenosis of the hepaticojejunostomy (● Fig. 1). Transgastric puncture of the left intrahepatic duct with a 19-gauge access nee-

dle (Cook Medical, Winston-Salem, North Carolina, USA) was performed under endoscopic ultrasound (EUS) guidance. The needle was removed after bile had been obtained and cholangiography had been performed, which showed dilatation of the intrahepatic and common hepatic ducts to 11 mm and stenosis of the hepaticojejunostomy (● Fig. 2). A 0.035-inch guidewire reached the jejunum, and 6- and 7-Fr Soehendra dilators (Cook Medical) were advanced over the wire (● Fig. 3). A 4-mm MaxForce balloon (Boston Scientific, Natick, Massachusetts, USA) was used to dilate the stenosis (● Fig. 4).

Next, EUS-guided antegrade stent placement via the transhepatic route was accomplished. A 10-mm×6-cm uncovered self-expanding metallic stent (SEMS; TaeWoong Medical, Seoul, South Korea) was advanced through a therapeutic echoendoscope over the guidewire and deployed across the stricture (● Fig. 5). Proper placement was confirmed by fluoroscopy, and there were no immediate complications. The patient was discharged home 7 days later in stable clinical condition and with resolved cholangitis.

Access to the biliary ducts in patients with surgically altered anatomy is challenging. Considerable experience with double-balloon enteroscopy (DBE) has been obtained, with good results; however, the procedure is technically difficult, time-consuming, and not always available [1]. Access to the biliary tract with EUS guidance is a valuable resource in experienced hands [2], but there is little information about endoscopic antegrade transhepatic SEMS placement in patients with surgically altered anatomy [3]. We consider that EUS-guided transhepatic antegrade SEMS placement is a good alternative in patients with surgically altered anatomy when DBE has failed or is not available.

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Fig. 3 A 0.035-inch guidewire reaches the jejunum, and Soehendra dilators are advanced over the wire.

Bibliography

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Fig. 4 A MaxForce balloon is used to dilate the stricture. **a** The stricture is clearly seen in the middle. **b** Progressive dilation with the balloon. **c** The stricture is not visible at the end of the procedure.

Fig. 5 The stent is advanced through a therapeutic echoendoscope over the guidewire and deployed across the stricture.